

Claims

1. A variable position catalyst, comprising:
a catalyst housing (7) accommodating a catalyst body (1); and
an actuator member (9) for moving the catalyst body (1) with respect to the catalyst housing (7) such that the catalyst body (1) can be moved to an active catalyst position (35) or to an inactive catalyst position (14).
2. The variable position catalyst according to claim 1, wherein the active catalyst position (35) is exposed to an exhaust gas stream of an engine.
3. The variable position catalyst according to claim 1 or 2, wherein at least the inactive catalyst position (14) is provided within the catalyst housing (7).
4. The variable position catalyst according to claim 1, 2 or 3, wherein the catalyst body (1) is held by a cradle (5) connected to the actuator member (9) by an actuator rod (10).
5. The variable position catalyst according to claim 4, wherein the catalyst housing (7) has a cylindrical inner shape and the cradle (5) has a cylindrical outer shape, the inner diameter of the catalyst housing (7) fitting to the outer diameter of the cradle (5).
6. The variable position catalyst according to claim 4 or 5, wherein the cradle (5) comprises two disc-shaped plates (2, 3) between which the catalyst body (1) is held.

7. The variable position catalyst according to any of claims 1 to 6, wherein the actuator member (2) is a pneumatic device.

8. The variable position catalyst according to any of claims 1 to 6, wherein the actuator member (9) is an electric device.

9. The variable position catalyst according to claim 4, wherein the actuator rod (10) moves the catalyst body (1) to the active catalyst position (35) when the actuator (9) is actuated, and moves the catalyst body (1) to the inactive catalyst position (7) when the actuator (9) is released.

10. The variable position catalyst according to any of the preceding claims, wherein the catalyst body (1), the catalyst housing (7) and the actuator member (9) comprise one common axis along which the catalyst body (1) is movable.

11. The variable position catalyst according to claim 10, wherein the actuator member (9) is located outside the catalyst housing (7), and the actuator rod (10) penetrates the catalyst housing (7) along the common axis.

12. The variable position catalyst according to any of claims 4 to 11, wherein the cradle (5) comprises a leading edge (13a) which is always in contact with a portion of the catalyst housing (7) providing the inactive position (14).

13. The variable position catalyst according to any of the preceding claims, wherein the variable position catalyst is provided upstream of a turbocharger of an engine.

14. An internal combustion engine, wherein an exhaust gas of the engine is passed through an exhaust gas passage, the combustion engine further comprising a variable position catalyst having:

a catalyst housing (7) accommodating a catalyst body (1); and

an actuator member (9) for moving the catalyst body (1) with respect to the catalyst housing (7) such that the catalyst body (1) can be moved to an active catalyst position (35) or to an inactive catalyst position (14).

15. The internal combustion engine according to claim 14, wherein the active catalyst position (35) exposed to an exhaust gas stream of the engine.

16. The internal combustion engine according to claim 14 or 15, wherein at least the inactive catalyst position (14) is provided within the catalyst housing (7).

17. The internal combustion engine according to claim 14, 15 or 16, wherein the catalyst body (1) is held by a cradle (5) connected to the actuator member (9) by an actuator rod (10).

18. The internal combustion engine according to claim 17, wherein the catalyst housing (7) has a cylindrical inner shape and the cradle (5) has a cylindrical outer shape, the inner diameter of the housing fitting to the outer diameter of the cradle (5).

19. The internal combustion engine according to claim 17 or 18, wherein the cradle comprises two disc-shaped plates (1, 2) between which the catalyst body (1) is held.

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27. The combustion engine according to any of claims 14 to 26, further comprising a turbocharger for compressing the air to be supplied to the combustion engine, wherein the variable position catalyst is disposed upstream of the turbocharger.

28. A method for controlling a variable position catalyst incorporated into a combustion engine according to any of claims 14 to 27, wherein the catalyst body (1) is moved to the active catalyst position (35) when the engine is in a predetermined first operation state, and the catalyst body is moved to the inactive catalyst position (14) when the engine is in a predetermined second operation state.

29. The method for controlling a variable position catalyst according to claim 28, wherein the first and the second operation state of the engine are dependent at least on the temperature of the engine.